Claims

[c1] 1.A phase coupler for operable communication between at least two phases of an electrical distribution system while maintaining power isolation between the phases comprising:
a band pass filter circuit connected to the at least two phases, said circuit configured to transfer a signal having a predetermined frequency or frequency range from a first phase to a second phase;
a first terminal in operable communication with said circuit and said first phase;
a second terminal in operable communication with said circuit and said second phase;
a third terminal in operable communication with said circuit and a neutral line of the electrical system; and
a housing configured to house said circuit and provide access to said first, second and third terminals for electrical connection with corresponding conductors.

[c2] 2.The phase coupler of claim 1 further including:
a surge arrestor circuit in operable communication with the at least two phases for arresting surges arising in one of the at least two phases or both phases.

[c3] 3.The phase coupler of claim 1 wherein said first and second terminals include stab style terminals for engagement with a corresponding bus connector of a phase bus bar within an electrical distribution panel.

[c4] 4.The phase coupler of claim 3 wherein said third terminal includes a wire connected to a neutral bar disposed in said electrical distribution panel.

[c5] 5.The phase coupler of claim 1 wherein said first and second terminals bolt onto a bus connector of a phase bus bar within an electrical distribution panel.

[c6] 6.The phase coupler of claim 1 wherein said predetermined frequency includes a frequency range of about 100 kHz to about 400 kHz.

[c7] 7.The phase coupler of claim 1 wherein said housing is configured to engage with the at least two phases inside an electrical distribution panel.

[c8] 8.The phase coupler of claim 1 wherein said housing is configured to have said circuit engage with the at least two phases of a multiple phase outlet receptacle.

[c9] 9.The phase coupler of claim 8 wherein said housing is configured on one side to provide operable communication between said circuit and the at least two phases in said multiple phase outlet receptacle, said housing configured on another side to receive a multiple phase power plug for powering a multiple phase device, said plug in operable communication with the at least two phases of said outlet receptacle.

[c10] 10.The phase coupler of claim 1 wherein said frequency range is suitable for supporting a communication protocol for control of powerline carrier products over an AC powerline.

[c11] 11.A phase coupler for use with a service line within an electrical distribution panel, the phase coupler comprising:
a housing made of electrically insulating material, the housing having a base adapted for connection with the distribution panel;
at least two high potential terminals being adapted for connection to at least two corresponding high potential lines disposed in the electrical distribution panel, each high potential terminal being exposed at said base of housing;
a low potential terminal being adapted for connecting to a low potential means, the low potential terminal extending through the housing; and
a band pass filter circuit being enclosed within said housing and connecting between each high potential terminal and said low potential terminal, said capacitive circuit configured to transfer a signal having a predetermined frequency or frequency range between said at least two high potential terminals.

[c12] 12.The phase coupler of claim 11 further including a surge arrestor circuit enclosed within said housing and connecting between each high potential terminal and said low potential terminal.

[c13] 13.The phase coupler of claim 11 wherein the phase coupler includes:
a wire lead electrically connecting to the low potential terminal and the low

potential means; and

a pair of contact stabs connecting to each high potential terminal, the contact stabs configured to electrically and mechanically connect to a bus bar.

[c14] 14.The phase coupler of claim 11 wherein the phase coupler includes:

a wire lead electrically connecting to the low potential terminal and the low potential means; and

a pair of contacts connecting to each high potential terminal, the contacts configured to be fastened to a bus bar for mechanical and electrical connection therewith.

[c15] 15.The phase coupler of claim 11 wherein said base is configured to engage an outlet receptacle and the phase coupler further includes:

a neutral terminal prong electrically connecting to the low potential terminal and the low potential means, wherein said low potential means is a neutral receptacle terminal of an electrical outlet receptacle; and

a pair of plug-in terminals connecting to each high potential terminal of said outlet receptacle, the plug-in terminals configured to electrically and mechanically connect to corresponding high potential receptacle terminals of said outlet receptacle.

[c16] 16.The phase coupler of claim 11 wherein said frequency range is suitable for supporting a communication protocol for control of powerline carrier products over an AC powerline.

[c17] 17. A multiphase load center, panelboard or the like comprising:

a service line in operable communication with the load center, said service line including at least two high potential lines and a low potential means;

a plurality of branch circuit breakers connected to at least one of said at least two high potential lines and said low potential means, said branch circuit breakers mounted within the load center;

a phase coupler for transferring a signal across said at least two high potential lines, the phase coupler comprising:

at least two high potential terminals being adapted for connecting to said at least two corresponding high potential lines of the service line;

a low potential terminal being adapted for connecting to said low potential means; and

a capacitive circuit connecting said at least two high potential terminals with one another for signal transfer at a predetermined frequency while isolating electrical power between said high potential lines.

[c18] 18. The multiphase load center of claim 17 wherein the phase coupler further includes a surge arrestor circuit connected to the circuit in operable communication with said at least two high potential terminals and said low potential terminal.

[c19] 19.The multiphase load center of claim 17 wherein said phase coupler includes:

a wire lead electrically connecting to the low potential terminal and the low potential means; and

a pair of contact stabs connecting to each high potential terminal, the contact stabs configured to electrically and mechanically connect to a bus bar.

[c20] 20.The multiphase load center of claim 17 wherein the phase coupler includes:

a wire lead electrically connecting to the low potential terminal and the low potential means; and

a pair of contacts connecting to each high potential terminal, the contacts configured to be fastened to a bus bar for mechanical and electrical connection therewith.

[c21] 21.The multiphase load center of claim 17 further including a main circuit breaker mounted within the load center, said main circuit breaker receiving current from said service line and distributing said current to said plurality of branch circuit breakers.

[c22] 22.The multiphase load center of claim 17 wherein said frequency range is suitable for supporting a communication protocol for control of powerline carrier products over an AC powerline.